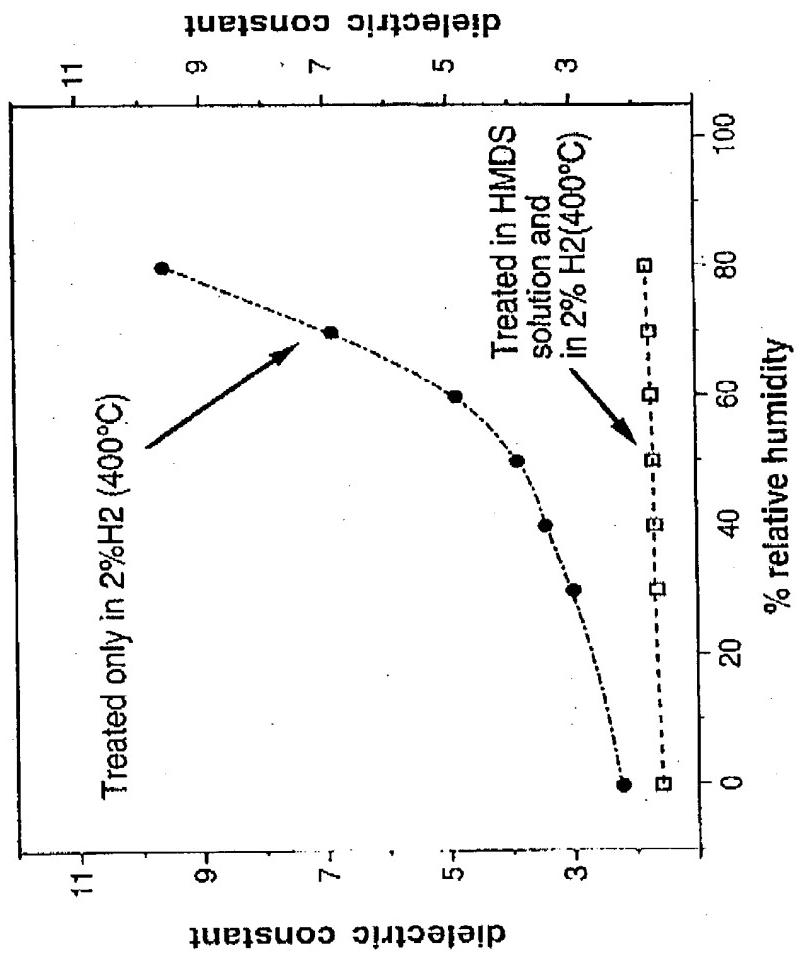
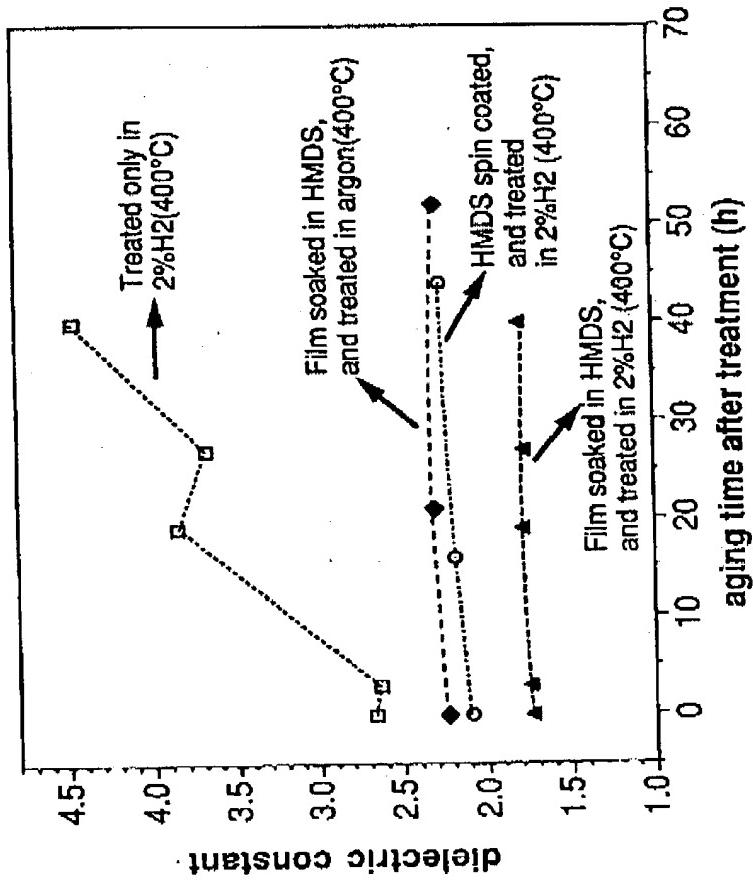


Dielectric constant of polyoxyethylene
ether-based films as a function of humidity

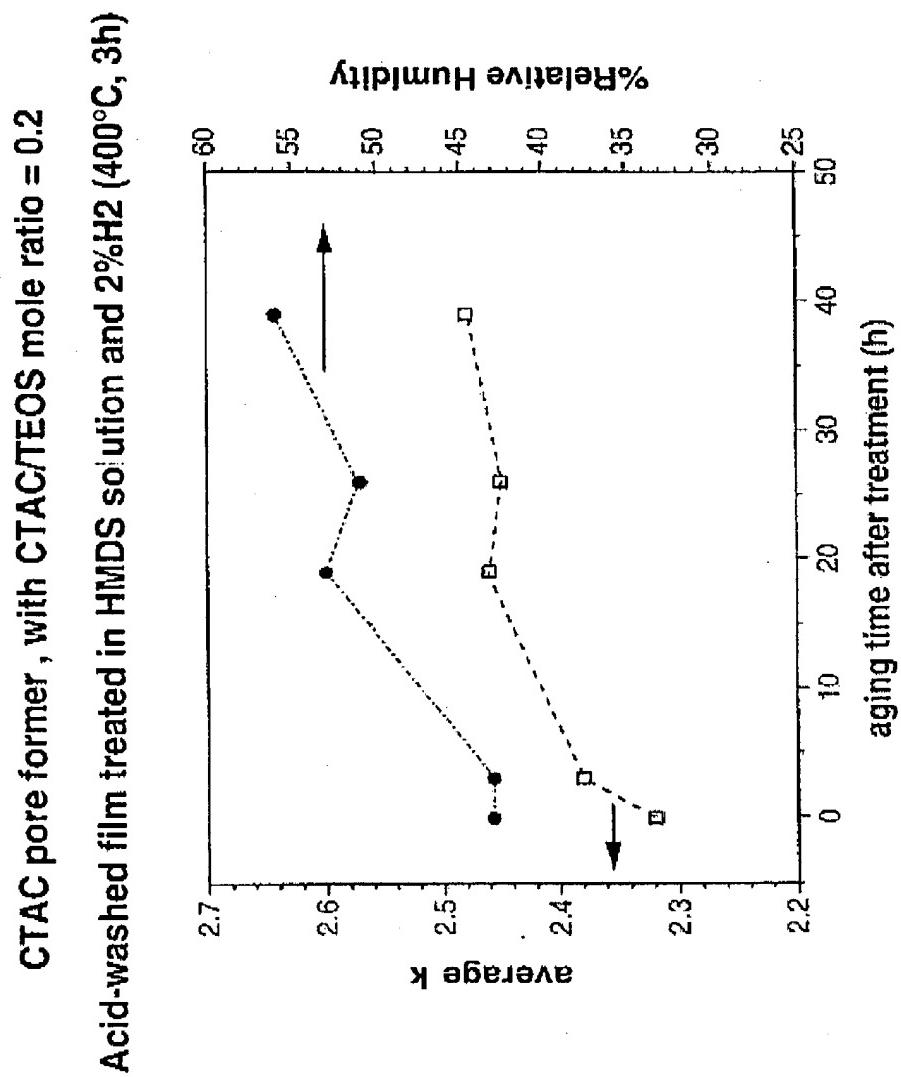


Dielectric constant for films with $k < 2.0$ increases by $\approx 13\%$ with increase in humidity from 0 to 80%

Dielectric constants in the range 1.8 to 2.5
obtained with polyoxyethylene ether surfactants

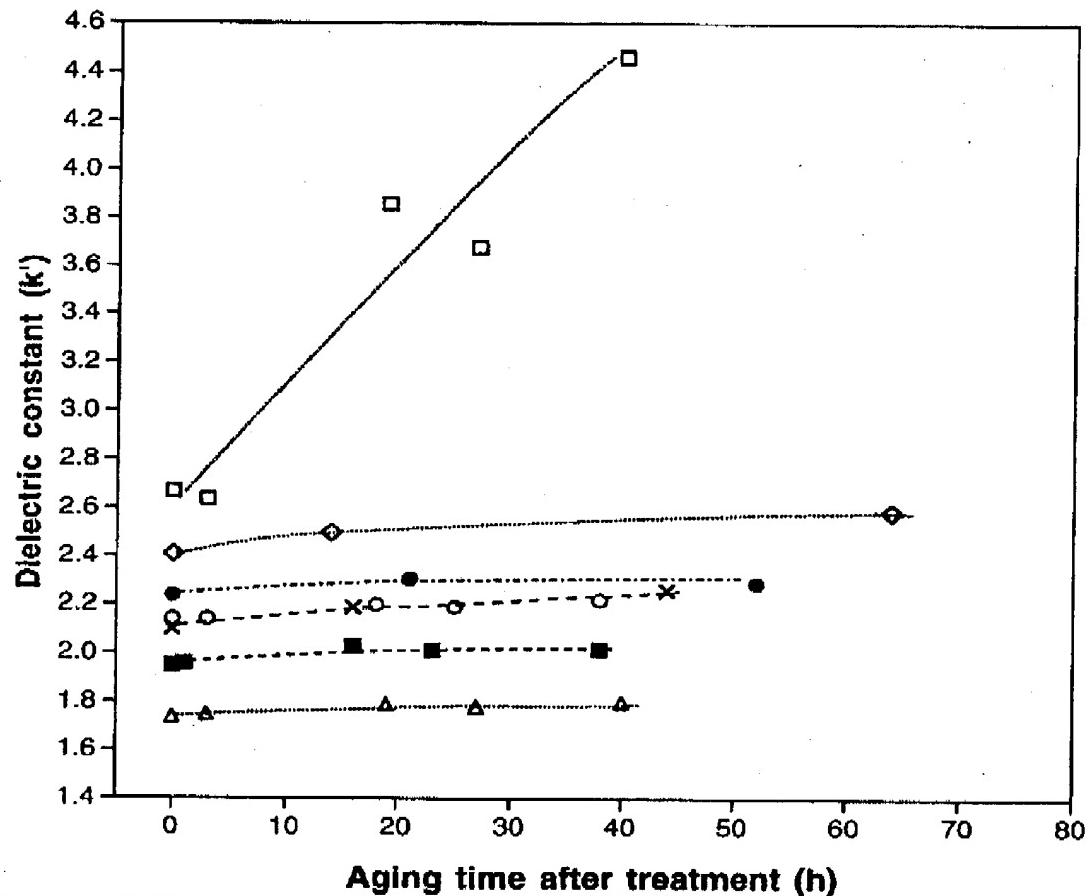


Dielectric constant very sensitive to dehydroxylation procedure



$k \approx 2.3$ measured in laboratory ambient

Figure 1: Dielectric constant of surfactant-templated silica films as a function of aging time under ambient conditions as a function of various treatments



- | | |
|---|---|
| □ | $2\% \text{H}_2, 2\text{h}, 400^\circ\text{C}$ (103-2-1-B1) |
| ◊ | HMDS (L) >> $2\% \text{H}_2, 2\text{h}, 400^\circ\text{C}$ (XL-92-2) |
| ○ | HMDS (L) >> $2\% \text{H}_2, 2\text{h}, 400^\circ\text{C} >> \text{HMDS(L)}$ (103-2-I-A1) |
| △ | HMDS (L) >> $2\% \text{H}_2, 2\text{h}, 400^\circ\text{C} >> \text{HMDS(L)} >> 2\% \text{H}_2, 2\text{h}, 400^\circ\text{C}$ (103-2-I-A2) |
| ■ | HMDS (L) >> Ar, 2h, 400°C (103-2-1-B2) |
| ● | HMDS(L) >> Ar, 2h, 400°C >> HMDS(L) >> Ar, 2h, 400 (112-1-III-D2) |
| × | HMDS spincoat >> $2\% \text{H}_2, 2\text{h}, 400^\circ\text{C} >> \text{HMDS spin coat} >> 2\% \text{H}_2, 2\text{h}, 400^\circ\text{C}$ (103-2-1-C1) |

Exhibit D

inventors - signatures with dates
witnesses - signatures with dates